

Final Project: Around the World

1. Graph and Chart (15 points)
 - List each city/continent you plan to visit
 - Provide a clear chart listing the cost between each pair of cities (see textbook for examples)
 - Construct a weighted graph conveying the cost information between pairs of cities
 - Include 5 screenshots supporting the cost information that you are using
2. Nearest Neighbor algorithm (10 pts)
 - Provide work showing your application of the NNA, starting at Fairbanks
 - List the order you visit the cities, starting at Fairbanks
 - Provide the total cost of this route
3. Repeated Nearest Neighbor algorithm (15 pts)
 - Provide work showing your application of RNNNA starting at the other 5 cities
 - For each city, provide the order you visit the cities, starting at Fairbanks
 - Provide the total cost of each route
 - Identify the cheapest route produced by the RNNNA
4. Sorted Edges/Cheapest Link Algorithm (15 pts)
 - Provide work showing your application of the Sorted Edges/Cheapest Link algorithm
 - List the order you visit the cities, starting at Fairbanks
 - Provide the total cost of this route
5. Your Turn (15 pts)
 - Either
 - Demonstrate the cheaper circuit you found, starting/ending at Fairbanks, the total cost of this trip, and a description of your strategy.
 - or
 - Provide a justification for why you have already found the cheapest circuit.
6. Further Analysis (20 pts)
 - State the algorithm (NNA, RNNNA, Cheapest link) that produced the cheapest circuit
 - Discuss whether you were surprised by which algorithm gave the fastest route, and why
 - Determine how many Hamiltonian circuits there are going between Fairbanks and one city in each country in the European Union, with supporting work
 - Discuss whether or not it is reasonable to use the Brute Force algorithm to determine the optimal Hamiltonian circuit starting and ending at Fairbanks and passing through one city in each of the countries in the European Union. Provide supporting analysis for your determination of reasonableness.
7. Grammar, mechanics, and following directions (10 points)
 - Use sufficient words and complete sentences in your discussions
 - Use correct grammar and mechanics in your writing
 - Use words and headings to make it clear what you are answering where
 - Computations should be presented clearly and legibly
 - Follow the directions